

REMARKS

Claims 1, 2, 8 and 10 have been amended, claim 3 has been cancelled without prejudice, and claims 20 and 21 have been added. No new matter has been added by virtue of the amendments. For instance, support for the amendments appears e.g. at page 15, lines 5-10 and original claims 19 and 35, which disclosure makes clear that addition of a further resin as well as a resin that contains acetal groups is an optional embodiment.

Applicants submit herewith an unsigned copy the Rule 132 Declaration of co-inventor Dr. Robert Brainard. That Declaration includes comparative data that shows that methods of the invention that employ photoresists that contain one or more photoacid generator compounds in an amount of 5 weight percent or greater and exposed to EUV radiation provide notably improved lithographic results relative to comparable photoresists that are imaged with deep UV (DUV, 248 nm) radiation.

A signed copy of Dr. Brainard's Declaration is being submitted under separate cover.

Claims 1-3 and 7-19 were rejected under 35 U.S.C. 102(e) over Chen et al. (U.S. Patent 6,013,447). The rejection is traversed.

Applicants' independent claim 1 (the only pending independent claim) calls for:

a photoresist composition comprising a resin and one or more photoacid generator compounds, wherein the one or more photoacid generator compound are present in a concentration of from 5.0 to 15.0 weight percent based on weight of total solids of the photoresist composition;

and exposing the photoresist coating layer to EUV radiation to form a photoresist relief image.

As discussed above, as shown in Dr. Brainard's Declaration, that photoresist composition and exposure thereof as recited in Applicants' claim 1 can provide enhanced performance results, namely enhanced lithographic results relative comparable photoresists imaged with 248 nm (deep UV) radiation.

The Chen document clearly does not anticipate or render obvious the pending claims.

Rather, the Chen document reports a certain composition that contains a blend of a certain two resins, wherein one resin of the blend has so-called high activation energy protecting groups and another resin of the blend has so-called low activation energy protecting groups.

The examples of the Chen document *only* report imaging with 248 nm radiation with relatively low amounts of photoacid generator compound. No other imaging radiation is disclosed.

At column 6, lines 14-20, Chen et al. states that "[t]he specific photoacid generator selected will depend on the irradiation being used for patterning the resist." Nowhere however does Chen et al. indicate what photoacid generator might be employed for imaging with radiation other than 248 nm.

In the Office Action, column 7 of the Chen document is cited for ranges of amounts of photoacid generator compound.

However, those cited ranges are not sufficient to sustain the instant rejection. In particular, that column 7 disclosure of the Chen document does not indicate that such amounts should be used for imaging with EUV radiation. In this regard, it is noted that Applicants do not claim herein simply a photoresist, but a photoresist with photoacid generator compound concentration range that is imaged with EUV radiation.

Thus, as noted above, the Chen document provides no examples of EUV-imaged photoresists with amounts of photoacid generator compounds that overlap with Applicants' claims.

Section 2141.03 of the Manual of Patent Examining Procedure further indicates that the instant rejection is properly withdrawn and which states in part:

When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious.

Additionally, Applicants' claims 20 and 21 are further distinct from the Chen document. As discussed above, the Chen document requires a certain resin blend, which is not provided in Applicants' claims 20 and 21.

In view thereof, reconsideration and withdrawal of the rejection are requested.

Claims 1-3 and 11-18 were rejected under 35 U.S.C. 102(e) over Barclay et al. (U.S. Patent 6,492,086). As grounds for the rejection, the following is stated at the paragraph bridging pages 4-5 of the Office Action:

In Example 8 (see also, col. 1, lines 6-11), Barclay teaches a chemically-amplified positive-acting photoresist composition comprising phenol/stryrne/2-methyladamantyl methacrylate terpolymer and di-t-butyl phenyl iodonium camphorsulfonate in the amount of solid ratio of 4.72 *which is rounded off to 5* (the 5 wt% of present claim 1 has only one significant figure, and therefore, Barclay's 4.72 is rounded off the 5 to make it into one significant figure too. Barclay spin-coats the photoresist composition onto a silicon wafer and then expose it with a KrF laser (248 nm).

The rejection is traversed.

The cited disclosure of the Barclay patent is not sufficient to sustain the instant rejection. Nowhere do the Rules or case law provide that a disclosed amount may be "rounded up" in order to meet the requirements necessary to advance a Section 102 rejection.

In fact, case decisions and the MPEP specifically indicate otherwise. See, for instance, *In re Marshall*, 198 USPQ at 346 ("[r]jections under 35 USC 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art."). Similarly, MPEP Section 2131 states:

A claim is anticipated only if and each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. * * * The identical invention must be shown in as complete detail as is contained in the .. claim.

Additionally, Applicants' independent claim 1 has been amended herein to recite "5.0".

The Barclay citation also does not render obvious the pending claims. The examples of the Barclay document all employ 248 nm (deep UV exposure) with photoresists that have a photoacid generator concentration of less than 5.0 weight percent.

As discussed above and shown in Dr. Brainard's Declaration, systems of the invention that include photoresists that have one or more photoacid generator compounds in a concentration of 5.0 weight percent or higher and imaged with EUV radiation exhibit notably improved lithographic results relative to comparative photoresists that are imaged with 248 nm radiation.

In view thereof, reconsideration and withdrawal of the rejection are requested.

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It is believed that the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'P. Corless', written in a cursive style.

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